

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (Currently Amended): A method for analyzing a plurality of fluid specimens consisting essentially of compounds and fragments thereof with a single analyzing instrument wherein multiple fluid streams can be sampled and combined comprising the steps for:

- a) preparing a plurality of N fluid specimens wherein N is an odd number greater than 2;
- b) introducing a first combination of r specimens wherein r is ~~less than N~~ an even number equal to $(N + 1)/2$ into a homogenizing volume to create a homogenized specimen;
- c) introducing at least a portion of the homogenized specimen to the analyzing instrument and recording the results of the analysis maintaining an association with the combination of r specimens;
- d) introducing additional different combinations of specimens into said homogenizing volume and repeating steps b) and c); and
- e) with a programmed digital computer mathematically processing the recorded results to produce analyses corresponding to individual fluid specimens.

Claim 2 (Original): The method according to claim 1, wherein the fluid specimens are gaseous specimens diluted with a carrier gas.

Claim 3 (Original): The method according to claim 2, wherein the analyzing instrument is a mass spectrometer.

Claim 4 (Original): The method according to claim 3, wherein the mathematical processing comprises deconvolution.

Claim 5 (Original): The method according to claim 4, wherein the mathematical processing comprises a Hadamard transform.

Claim 6 (Original): The method according to claim 1, wherein each specimen is directed into the homogenizing volume from individual nozzles connected to electronically controlled valves.

Claim 7 (Original): The method according to claim 6, wherein the nozzle sizes, pressure drops therethrough, and open times of said valves is controlled to introduce a specified mass of each fluid specimen into the homogenizing volume.

Claim 8 (Original): The method according to claim 7, wherein when the nozzles are not supplying specimen to the homogenizing volume the flow of the specimen is diverted and continued.

Claim 9 (Cancelled).